**Electricity and Magnetism Study Guide**

*Make flashcards for the following terms:*

1. Volts – electric potential difference
2. Amps/amperes – electric currents
3. Ohms – measure of resistance
4. Circuit – closed path for electric current
5. Resistance – opposition to current (a current struggling to get through)

What type of wires have greater resistance? \*think shape and size\*

Longer wires, thinner wires

1. Conductors – allows current to flow

Examples: iron

1. Insulators – stops current flow

Examples: - rubber

*Answer the following questions about parallel and series circuits:*

|  |  |  |
| --- | --- | --- |
|  | **Parallel** | **Series** |
| 1. How many paths does it take? | More than 1 | 1 path |
| 1. Do all loads have to be on to work? | no | yes |
| 1. Do the appliances shares voltage? | no | yes |
| 1. Is this a good way to wire a home? | yes | no |
| 1. How do extra bulbs affect the brightness of the others? | They don’t | Lower brightness |
| 1. Give Examples |  |  |

*Describe static electricity:*

1. How does it move? – charges move from one object to another and then remain still
2. What does it consists of? – pos, neg charges

1. Describe how charges are attract/repel one another.

Opposites attract, like repel

1. Give examples of static electricity

\*socks stuck together, lightening (large discharge), slide, balloon

*Answer the following questions about electrical current:*

1. Define electrical current – flow of electrons
2. Describe alternating current (A.C.) – current that rapidly changes direction

Examples: appliances

1. Describe direct current (D.C.) – current stays in one direction

Examples: flashlight

1. What does a switch do? Turn current on and off

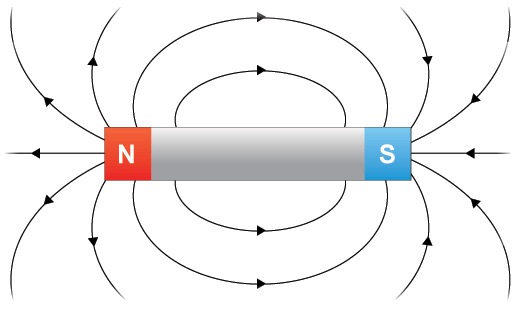
*Answer the following questions about magnets:*

1. Describe the magnetic field of a magnet. Area of magnetism around a magnet

1. Where is the force of a magnet the strongest? Weakest?

At the poles; away from poles (middle)

1. Sketch a magnetic field of a bar magnet

[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjIwt_eruvKAhXCqB4KHcvODZAQjRwIBw&url=http://www.bbc.co.uk/bitesize/ks3/science/energy_electricity_forces/magnets_electric_effects/revision/3/&psig=AFQjCNEx8lQ9sJD5O5SBkOy_FbHDOzy9bA&ust=1455130785343508)

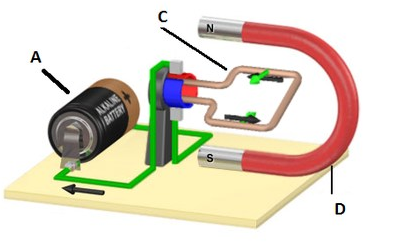
1. Give an example of a natural magnet?

lodestone

1. What types of items can become natural magnets? \*\*\*What are they made of\*\*

*Answer the following questions about Electromagnets:*

1. What are the parts of an electromagnet? Power source, permanent magnet, and the temporary magnet
2. How can you increase the strength of an electromagnet? More coils
3. How and when can an electromagnetic be useful?
4. Label the following diagram of an electromagnet



A.\_\_\_\_power source\_\_\_\_\_\_\_\_ C. \_\_\_\_\_\_\_\_\_\_temporary magnet (coils)\_\_\_\_\_\_\_\_ D.\_\_\_\_\_permanent magnet\_\_\_\_\_\_\_\_\_\_\_\_

Answer the following questions about generators and motors

1. What does an electric motor do? Converts electric energy to mechanical energy

1. What does a generator do? Chemical to mechanical to electrical